

Cover images - Lunar eclipse 4 April 2015 by Greg Walton
 YouTube - <http://youtu.be/11cFIP-L3rU>



SCORPIUS

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 MORNINGTON PENINSULA ASTRONOMICAL SOCIETY INC.

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The Mornington Peninsula Astronomical Society (formerly the Astronomical Society of Frankston) was founded in 1969 with the aim of fostering the study and understanding of Astronomy by amateurs and promoting the hobby of amateur Astronomy to the general community at all levels.

The Society holds a focused general meeting each month for the exchange of ideas and information. Regular public and private observing nights are arranged to observe currently available celestial objects and phenomena. In addition, the society encourages the services of its members for educational presentations and observing nights for schools and community groups. Reg No: A268 ABN: 34569548751 ISSN: 1445-7032

Briars Lunar Eclipse ED80 FF 2x convertor EQ6 Pentax K30 20sec iso100 By Greg Walton MPAS 4 April 2015



SCORPIUS The journal of the Mornington Peninsula Astronomical Society

Newsletter Disclaimer

The Scorpius Newsletter is published online, once every two months for its membership, by the Mornington Peninsula Astronomical Society, for Educational Purposes Only. As a newsletter, this publication presents news spanning a spectrum of activities, reports, and publications in order to keep society members abreast of a variety of events and views pertaining to astronomy. While prudent, reasonable effort has been utilized to verify factual statements made by authors, inclusion in this newsletter does not constitute or imply official MPAS endorsement. All materials (except previously published material, where credited) are subject to copyright protection © 2015, Mornington Peninsula Astronomical Society

SOCIETY NEWS

By Greg Walton

Saturday 28th February Morning Working Bee - Just 5 members in attendance... We spread stone on the new drive, removed the old fallen tree, removed the branches, rubbish & grass in the northern corner & wiper snipping around the buildings. Photos by Sky Murphy



Parkdale Secondary – We had a good, fun night at Parkdale Secondary College with over 115 Year 7 pupils, teachers and parents present in a small, quite treed, park adjacent to the school. The Vice Principal and some of the teachers were especially enthusiastic. There were two pass-overs of the International Space Station. One was about the time that Peter Lowe was beginning his talk inside, and contending with data projector colour issues, and saw the ISS pass very close to both Jupiter and the Moon. It was a missed photo opportunity. The second was seen about 95 minutes later in the evening way over in the West. In addition, Jupiter put on a wonderful show, with 3 moons visible for most of the evening, but turning into 4 as Europa moved from in front of the planet and egressed into view. There was a shadow transit of Io, visible in Greg's Dobsonian as a distinct dark spot on the Jovian surface. The conditions were surprisingly steady, given a mild breeze, strong moonlight and looking over asphalt car-park in the school grounds. However, although the bands on Jupiter were impressive, my 6 inch Newtonian couldn't on this occasion resolve the shadow. In the field with telescopes were Anders Hamilton, Peter Skilton, Greg Walton, Sky Murphy, Ian Sullivan, Heinz Rummel and Inge Marcinkowski, Fiona Murray and Jamie Pole. Thanks for those who were able to attend and help out. I know the school were very impressed, and indeed very lucky to have cloudless skies. Also - Just had feedback from Parkdale Secondary about the telescope night during the week. The organiser, Lisa Cooper, relayed: "Thank you so much for the other night!!! It was absolutely magnificent. I have had so many students and parents saying how fantastic the evening was!!! The presentation was excellent and the members were all so enthusiastic in answering our students/parents questions about astronomy" "Please thank your club on behalf of everyone at Parkdale Secondary College." *Regards, Peter Skilton*

March public night - Saw only 10 members and 40+ very enthusiastic public in attendance, many seen the ISS past over head. Luckily the clouds cleared for 2 hours & everyone got to see Jupiter, while the full Moon made it hard to find the usual deep sky objects.

Camp Manyung - Clear skies were provided for 50 Camberwell Grammar School Year 6 pupils on camp at Camp Manyung in Mt Eliza. After some technical hitches to start with that delayed the evening a little, Peter Lowe gave the talk before the group moved up to the oval to look through the telescopes assembled there. It was quite cool conditions so the kids, some in short sleeve shirts only stayed around for about 15 minutes at the instruments. Good views were had of Jupiter and 3 of its moons, becoming 4 by the end of the evening, and of omega Centauri, the Jewel Box and Orion Nebula. There were numerous satellites passing over during the evening. Thanks for bringing along telescopes in the field and showing objects in the sky go to Greg Walton, Pia Pedersen, Sky Murphy, Phil Holt, Peter Skilton, Jamie Pole and Fiona Murray. *Regards, Peter Skilton*

Briars Eco Week - Thanks to Greg and Trevor for a helping hand at the Briars Environment Week (Day ?) We set up a few displays, telescopes, binoculars, meteorites, etc plus some Solar Observing later when the Sun appeared.

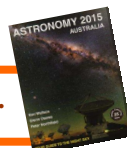
It turned into a great Sunday afternoon. Photos at right, *Cheers Peter Lowe*

Feed Back - Just a thanks for the patient way the gentlemen at the Briars observatory on Sunday showed to my two granddaughters, it all went in because in school on Monday the youngest told teacher she had looked at a red sun through a lens. on collection her teacher stopped me, was concerned about her eyes, till I explained about your telescope. The whole experience was told to their parents, in detail, well done. From - *Yvonne Malone*

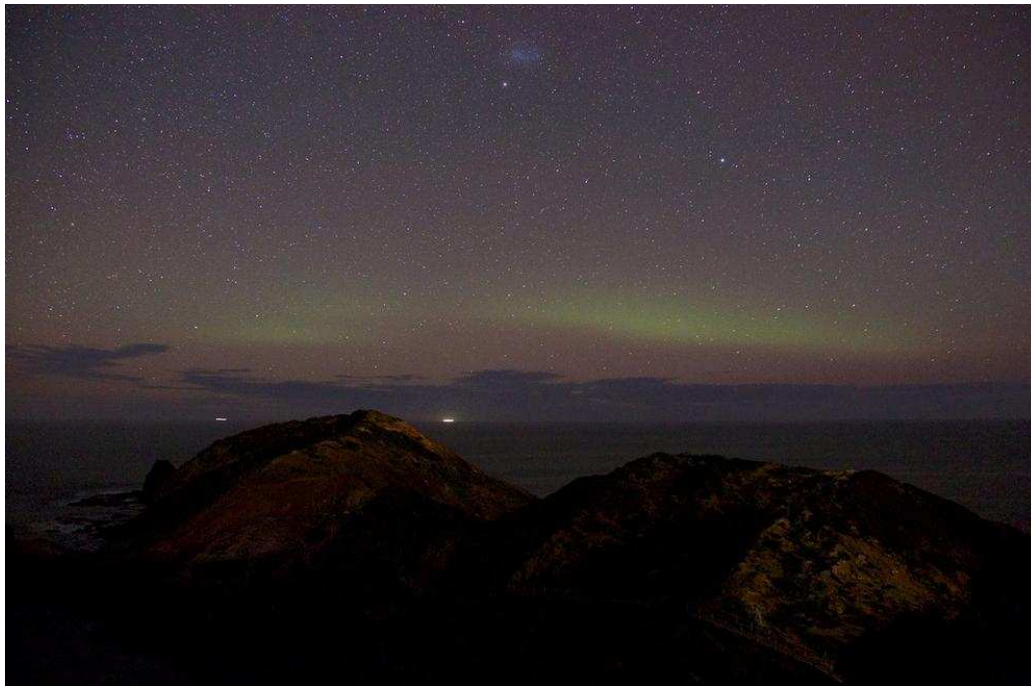
Point Leo - Forty-eight Year 5/6 pupils from Woodleigh Penbank Primary had a good open air viewing night last night at Pt. Leo Camping grounds. Peter Lowe gave much of the solar system talk under the stars with the screen set up by the school, and groups of students were shuttled to and from the telescopes to see what was on offer in the night sky between clouds. Good views of Jupiter were had, especially later in the evening, and of course the Orion Nebula. In the field with telescopes were Anders Hamilton, Jamie Pole and Peter Skilton. *Regards, Peter Skilton*



Astronomy 2015-year books can be purchased @ \$25 for members.



March Society Meeting - 26 members were in attendance. Peter Lowe (President) chaired the meeting then our speaker & member Stewart Gangell talked on 2 Rockets in one night; Maven Launch on Atlas 5 rocket and Orion EFT-1 on Delta IV Heavy rocket. Greg Walton did "sky for the month" and showed time-lapse and images of the recent Aurora from Southern hemisphere. Members chatted over coffee. After the meeting some member went to Finders & Cape Shank to try & capture an aurora. *Greg Walton* See below



Above - 2 Aurora images from Cape Shank by Andrew Nilsson
<https://www.flickr.com/photos/14703462@N05/sets/72157649107304223/>
 Camera settings f4, ISO 6400 at 30 seconds

Left - Aurora time Lapse From Blowhole at Flinders by Rohan Baumann
 Aurora Australis Timelapse 18-Mar-2015 <http://youtu.be/MDRrEiaQS1M>
 Canon 600D, 11-16mm Tokina lens @ 11mm, 30 sec subs, f2.8, ISO1600.

Right - Aurora photos taken on March 18 by Phillip Holt.
 Taken in Mornington 9:40pm, with a Pentax K-r SLR and all sky hubcap mirror. Image has been inverted during post processing to give correct constellation orientation. Bottom of image is SSW. Right is West. 15 seconds at F2.4 1600 ISO. The aurora's red glow is visible along southern horizon.

2nd Point Leo - 48 Year 3/4 students from Penbank Primary on camp at Pt. Leo camping grounds had a viewing night last night. Sadly the sky was totally overcast throughout the evening, except for a brief flash of Jupiter and Sirius, with a bit of wind, & with flashes of lightning though no rain. Nevertheless, Peter Lowe gave the talk set up inside the dome tent that had survived the winds from the previous day. Another dome tent had ripped and had to be dismantled before we arrived. The night before had been perfectly clear & with an auroral display, though no-one there at the time saw it. Helping with telescopes at the ready were Fiona Murray (and Ben), Sky Murphy, Anders Hamilton, Greg Walton and Peter Skilton. *Regards, Peter Skilton*

March members BBQ & Solar day - Briars Solar day @ 1pm ... about 10 members in attendance. We looked at the sun with a white light filter on the ED80 refractor, we only spotted one sun spot about the size of the earth. Then we looked at the sun with a hydrogen alpha filtered telescope. We saw many prominences reaching out from the edge on the sun, and also saw dark lines from material being dragged out of the surface of the sun & back down to the surface again. We also demonstrated how to read various sun dials. We then found Venus in the midday sky, but failed when we tried to find Mars & Mercury. Afterwards, we watched a DVD about the sun. Then we setup for the quick BBQ while Andes kindly mow the grass. We needed to get the BBQ over by 8pm as a scout viewing night was booked in on this same night, who are camping out at the Briars. Peter Lowe (president) gave the talk in the shed then at about 9pm member showed Jupiter & deep sky objects to the scouts for 1/2 hours, before they all marched off down the hill. Members stayed on till after 1am imaging & viewing many objects. I must say we all had a very successful night. *Clear Skies Greg Walton*

April public night - Approximately 45 in attendance -15 members and 30 members of the public. The sky was clear but a warm north wind made the seeing conditions poor. Everyone got to see Jupiter, while the almost full Moon made it hard to find deep sky objects. Even still, everybody seemed to have a good time, as many stayed on till midnight, by then Saturn was high above the horizon. *Greg Walton*

Below - Also see Story about April public night by Sky Murphy

Moon Map, Moon-glasses, Rabbit and Man on the Moon

Here's some lunar info a few people seemed to appreciate on Friday 3-Apr public night before the next night's eclipse. It's just a learning note for sharing. One little thing can lead to more investigation that expands one's horizon, infinitely.

*Some of what I knew, I knew not
Some of what others knew, they knew not either
Intelligence must fluidly and egolessly build on
A willingness to listen and communicate truth*

Moon-glasses: I was wondering whether sunglasses would be useful since my dubious moon-filter seemed useless –until proven otherwise that it's the useless user. Also curious what the moon would look like through a big 'scope so Helmut pointed Sky Drover to it, thank you Helmut and Greg. It was so blinding bright, kinda knocking you nearly off the ladder, but wearing sun(moon)glasses showed how much extreme fun it was to see and *drive* around the off-frame expanse of the lunar surface! Droving imaginary moon dust, I suppose. Members of the public seemed to enjoy this experience too –a chance of manoeuvring someone else's telescope without concern of upsetting its setting.

To me the image was by far much sharper and almost 3-dimensional through the f/15 refractor with no need to putdown its 60 mm. Many were keen to see where Neil Armstrong and Buzz Aldrin landed so discussion went on how to locate, starting from near the very round Mare Crisium then to the rabbit's head and ears, and whereabouts the landing site was on this 'head' Mare Tranquilitatis, and just moon-north of its equator. Also how what's seen in the sky is seen in different telescopes variously as right side up or up side down and/or mirrored left-right.

Referring to Astronomy 2015 Australia, which hopefully a few people then bought, it was more fun at a deeper level, that started some eyes goggling and mind boggling, about moon south being up, from the southern hemisphere viewpoint, and about moon east equate to earth west in the sky.

Apparently the designation of the moon's east and west were inconsistent until 1961 when an agreement was reached during a convention. You can see a legacy of this in the case of the swap around if you look up 'Mare Orientale' meaning 'Eastern Sea' now in moon west, most of it in the longitudinal libration area. (This is seen when the moon periodically shows more of its hidden face east or west due to the eccentricity of its orbit resulting in it being slightly ahead or behind. Added to this is the diurnal libration due to the angles of view from Earth at sunset and at dawn. There's also libration in the latitudes where periodically we see more beyond its poles, due to its rotational axis not being exactly perpendicular to its orbit. Clear explanation and diagrams can be found in The Cambridge Atlas of Astronomy, 3rd ed.1994 which members can borrow from MPAS library or buy as an excellent in-depth reference even if not up to date.)

This 'moon east (Earth west)' makes sense, being the morning side, sunrise side, of the moon. To us in the southern hemisphere the waxing moon starts with the shape of a 'C' from the moon's east then gradually fills up, from crescent then past half moon to waxing gibbous then full. Then shadow starts also from that east side from waning gibbous till we see the half moon 'D' then the waning crescent like the close bracket ')'. Holding a curved hand to represent a crescent moon you can trace very approximately along the ecliptic path and see which way and by how much the moon lies down on its side near the horizon. (If you recognise the constellations of the zodiac their 8-degree wide belt shows where the ecliptic plane, and therefore Earth orbit, is. Conversely if you know the moon path it helps you find constellations of the zodiac. But... be aware, the Earth tilt means the ecliptic appears to shift by 23.5 degrees north or south over each earth rotation i.e. one day. Also with the tilt of the zodiac belt, its 8-degree wide means a wider swathe along the horizon. Much less of the effect is the differing tilts of planetary orbits, Mercury's being 7 degrees, Venus' 3 and less for everything else, noting that the dwarf planet Pluto's is 17 and the Moon is within 5 degrees north or south of the ecliptic. If you study the solar system rise and set times, RA and declinations, and rise and set angles remembering how they're defined, this will be evident.)

To aid memory I use 'CD' or () for us; whilst in the northern hemisphere it's the other way round, i.e. DC or) (. They also have the rabbit up side down, except at moonrise. Also from the northern hemisphere the 'face' at full moon has two blobs of eyes and a splotchy mouth or a sideways outline may be seen during the waning crescent moon.

Please don't ever just believe or *expect* any mixture of correct/incorrect/opinions to stand; I wish for more of thinking people and less of believing by faith or competitiveness or following the norm. I wish for more truth talk, about longer wavelength i.e. redder light through Earth's atmosphere (similar to why we see sunset as reddish) and bending around Earth onto the moon, and less sensationalising with a blood-dripping moon or projecting human traits onto objects and natural events. Please use any resources including a moon map to test all info, e.g. pp 98-99 Astronomy 2015 Australia and share with us if you think differently. Also turn p87 upside down, i.e. N towards N horizon, and it can be worked out beforehand where on the moon to expect Earth shadow to enter and exit.

Sky 4-Apr-2015

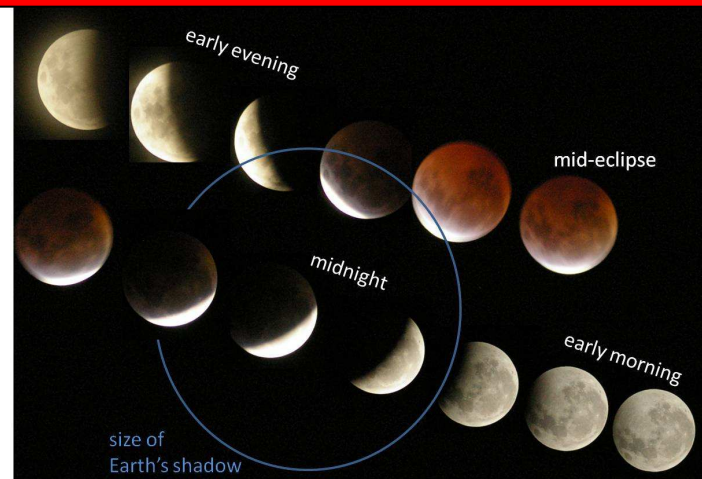
April 4th Lunar eclipse members BBQ & public night - About 20 members and 25 public in attendance. Peter Lowe & Ian Sullivan did a talk in the shed, while Pia sold sausages & cans of drink to the public. Members manning their telescopes showed the public Jupiter & some of the brighter deep sky objects. Most of the time the clouds got in the way of the Moon, right up until totality, when the Moon was to turn red. The clouds thickened & the public left. I packed up one of the telescopes as an offering to the cloudy gods. Then magically the clouds cleared and we saw the burnt orange Moon & the night just kept getting better & better. Looking through the telescopes we saw stars around the pale red Moon. We also spun the 'scope around looking at Saturn & many deep sky objects, as the sky had gone fairly dark. Many cameras were now clicking away, trying to get the perfect shot. Most members stayed till the end, then slowly packed up there telescopes & headed for home, very happy to have seen this spectacle, knowing there would not be another till 2018.

A big thankyou to all those members who helped out on this special event. *Greg Walton*

Below - Lunar eclipse by Greg Walton - See Time Lapse video at Vimeo - Link <https://vimeo.com/124887205>



MPAS Briars Lunar eclipse 4 April 2015 by Greg Walton



2015 April 4 montage imaged at Frankston by Peter Skilton using Pentax K100D camera with 300mm lens on fixed tripod.

Left
2015 April 04
Lunar Eclipse as photographed
from Frankston
by Peter Skilton. 300mm lens,
fixed, unguided tripod, Pentax
K100D.



Right Dave Rolfe's observatory

Below - Lunar eclipse images by Dave Rolfe

Taken from Cranbourne Vic. Various exposure times and setting used throughout event. Equipment: Pentax K5 camera William Optics 132 FLT Telescope. Lunar eclipse 2015 Time Lapse <https://youtu.be/ZpsCjG4n3wc>



Lunar eclipse by Dave Rolfe 4 April 2015

Total Lunar Eclipse 4-Apr-2015 from the Briars

Clouds with drifting black wisps parted at the right time for the 'Partial Begins' (when we all went very quiet), then on and off throughout this phase but amply enough to follow the progress. Widespread clouds thickened and many people gave up but the sky then became all clear! Some may know the song Blue Moon, with 'suddenly.... turned to gold'.

We were feasted with the most awesomely beautiful 'Total' showing a soft reddish glow, like of rose quartz, with a very thin sliver of bright arc just at the moon-north side that skimmed the Earth shadow, i.e. at the bottom edge. It was to me as reddish as any I'd seen in the past. Greg captured this special spectacle on video and that's real awesome.

The most beautiful optical view, in my assessment, was through the binocular (Colin's, with thanks), a 3-dimensional orb with a soft pearly rose pink light as if lit from inside. The reddish glow was later more to one side.

It was educational to read members' discussions afterwards including by Jacquie that it was not exactly the forecast 'total' because "the oblate shape of the Earth (eg, it bulges at the equator and is slightly flat at the poles) had not been factored into the calculations" and that there was an "intense greeny-blue strip" seen through the camera/scope. I did not mind it not being total at all; it was very special as it was, both in exquisiteness and in re-educating us about the earth's geometry. I feel grateful without reserve for the authoritative forecast as guidance and would always allow room for different eventualities that sometimes turn out more effective for our learning.

Locations of entry and exit were all as expected but the last 'Partial ends' time was about 20 minutes later than predicted (other times noted were more wildly approximated due to clouds sometimes and the observer being too enraptured other times). Someone offered an explanation that EST, being just the mean solar time, is given for longitude 150E but Melbourne, using EST with Daylight Saving adjustment, is at 145E; therefore, given that 15 degrees equate to one hour of sky journey the 5-degree difference meant approx. 20 minutes. I worked out later that that would explain it for position-related timing like rise-, culminate- and set-times, however a lunar eclipse event occurs at practically the same real time for all observers so this 20-minute discrepancy remains to be studied.

The stars lit up beautifully. The contrast between with-moon and without-moon made it remarkable. Highlights, for me, of the many objects viewed were: SATURN as a clear orb with well defined ring bands and moon(s), the red, i.e. rather than orange, carbon star EsB 365 (*see below) near Beta Crucis, the pairing of globular cluster NGC6441 and Gamma Scorpii, all large and very clear using Sky Drover, all thanks to Greg. Through Mark's telescope was the orange and blue double star H3945 in Canis Major (**see below). Colin's binocular showed Antares with one edge twinkling multicolour like from a sparkling facet-cut crystal gem. Other objects Helmut must have been showing from the bottom slab I didn't toddle down to see, being moonstruck. Jupiter GRS was supposed to be around 19:11 hrs but I missed that due to clouds or distractions. Greg saw a bright fireball to the west but a few of us were eyeball to eyepiece so missed that too.

Lenses fogged up, dew accumulated, ground fog spread, paper notebook pages damp, some telescopes and cameras dripping wet. It was after 01:00 hrs, time to leave.

The serene Good-Night finale was a beautiful rainbow-like circlet partly around the full moon, post-eclipse nearly overhead, apparently refracting off the ice crystal clouds –as explained by Mark that that area was most directly opposite the sun therefore the coldest part of the sky. Also, given that some ten days ago when we had that cold snap Melbourne was reportedly colder than the Antarctic, that tallies too.

Thanks to all there (operating his very own cool telescope was Jake) and especially Greg and Pia; we were even fed with midnight chocolates!

Sky 5-Apr-2015

* Quote: "This Carbon star is found just 2.5' to the west of Beta Crucis and is one of the reddest stars visible in a small telescope. It is an irregular variable (DY Crucis) with a brightness range from 8.4 to 9.8 magnitude. Compared to other so-called 'red' stars like Antares, for example, with a colour index (B-V) of 1.83, DY Crucis has a value of 5.8... in other words, very red." Quoted from Atlas of the Southern Night Sky 2nd ed S Massey, S Quirk, p 98. This is an excellent book written especially for southern hemisphere observers.

**Apology my typo in a previous post –Canis means one dog whereas Canes means multiple as in Canes Venatici, The Hunting Dogs, celestial-south of Coma Berenices.

10 Facts about the Moon we can use on the public nights, by Greg Walton

- 1 The Moons surface is only about 5% reflective, so there is little chance of it damaging our eyes.
- 2 The Moon is the same size as Australia, so if we were standing on the Moon looking at the Earth it would be about 3 & 1/2 times the diameter of the Moon. The smallest craters on the Moon we can see with a telescope are about a same size as Port Phillip Bay.
- 3 The temperature on the Moon is about 150C in the sun lit areas & about -150C in the shade.
- 4 The Moon has almost no atmosphere, no water & no life before man went there. A mouldy camera was left on the Moon.
- 5 The Moon is only 1% of the mass of the earth. I read the balance point of the earth & the Moon is inside the earth.
- 6 Light travels 300,000 kilometres in one second, so light from the Moon takes 1 & 1/4 seconds to travel the 400,000 kilometres to the Earth, so if you travel around the Earth 10 times, you have travelled the distance to the Moon. Earth's diameter - 12,500 km, times Pi (3.141) equals about 40,000 Kilometres.
- 7 As the Earth turns under the Moon, it drags the ocean with it, causing the tides on Earth. Few people know the Moon also drags the land up under our feet; at the equator by about 150mm & at Melbourne's latitude by about 60mm.
- 8 Same think the Moon is bigger when seen on the horizon, but in fact, if you were standing on the equator, it's bigger when directly over head, or about 6,000 kilometres closer (half the diameter of the Earth). In 6 hours, the Moon would travelled 6,000 kilometres closer. That equates to 1,000 Kilometres per hour. But if you were standing at the poles, there would be no change.
- 9 From Earth, the Moon is 1/2 a degree in diameter, so the Moon moves across the sky by it's own diameters every 2 minutes.
- 10 Neil Armstrong was the first man to walk on the moon, but according to Buzz Aldrin, Buzz was the first man to relieve himself on the moon(!)

April Society Meeting - 30 members were in attendance. Peter Lowe (President) chaired the meeting. Our guest speaker, Stephanie Bernard, a PhD student at Melbourne University talked on Supernovae. Greg Walton then did "sky for the month", showed time lapse & images of the recent Aurora from Southern hemisphere. Members chatted over coffee. See photos at right.

Abstract - The life of a massive star is short and sweet - they burn through their fuel in a short time and explode as extremely luminous events called supernovae. During the early universe, these events were extremely important, as they produced large amounts of ultraviolet light, contributing to the early re-ionisation of the Universe. This talk will describe the star formation process and how this leads to different types of supernovae, and place them in the context of the early Universe. *Sky*

Presenter - Stephanie Bernard is a PhD student at the University of Melbourne, investigating galaxy formation in the very early Universe. She completed a Master of Science in physics in 2015 from the University of Melbourne (in association with Swinburne University of Technology). Her Masters research was on supernovae occurring from the first stars to form after the Big Bang. During her MSc, she was accepted into the Vatican Observatory Summer School in Rome, Italy. Previously, she received a Bachelor of Science from the University of Melbourne, with research projects at Swinburne and at the Australian National University in Canberra. *Sky*

April members BBQ - 20 members in attended. Thank you to Dave Rolfe (Vice President) for buying in all the food and thanks Leanne Rolfe for help with the cooking. Also thanks to the members for setting up the food and the cleaning up afterwards. Some member missed the BBQ as they were at Vastroc. No viewing as the sky was overcast with some rain.



Photo below by Dave Rolfe.



On a sad note MPAS member - William (Bill) MARSHALL Passed away peacefully at home on Saturday the 14 March 2015 Aged 73 years, he mainly came to the public nights with his wife Denise, who is also a very keen astronomer. Bill built an observatory for Denise. He was also a member of the Ballarat Astronomical Society. Bill loved a chin wag & will be sadly missed at MPAS. Greg

Also sorry to inform everyone that Long time MPAS member - Jerry Walters suffered a stroke just before Xmas. I recently spoke with him & he is doing OK. I told him, we all hope he makes a speedy recovery & wish to see him back using the telescopes at the MPAS Briars site. Greg

2015 SUBSCRIPTIONS DUE

The ticking over of the New Year also means that society fees are now due to be paid. The society has worked hard to ensure that 2015 fees are still the same as last year's prices. So to assist the society in maintaining the facilities and service we provide, we appreciate your prompt payment for the 2015-year ahead.

As a reminder, the following structure of the fees are:

\$50 – Full Member
 \$45 – Pensioner Member
 \$65 – Family Membership
 \$60 – Family Pensioner Membership

SOCIETY FEES

Subscriptions can be paid in a number of ways:

- Direct Cash payments to a committee member
- Send a cheque or mail order to the society mail box MPAS. P O Box 596, Frankston 3199
- Make a direct electronic payment into the society working bank account.

The account details are BSB 033-272 Account 162207. Remember to add your name and details to the transfer so we can identify the payment in the bank records.

If you have any concerns please talk to a committee member.

Under the new government regulations, a list of financial member is required for insurance purposes, so please make certain your membership renewals are on time.

**New Members
 Welcome**

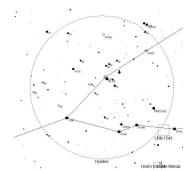
Brian Paton

| CALENDAR | | May / 2015 | | | | |
|---------------------------------------|--|-------------------------------------|--|------------|---|--|
| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
| 31 Mercury in inferior conjunction | | | | | 1 Public Night 8pm Mercury & M45 1.5deg | 2 |
| 3 | 4 Full Moon Saturn 1.2 deg from Beta Scorpii | 5 Saturn right of the Moon | 6 | 7 | 8 | 9 |
| 10 | 11 Last Quarter | 12 | 13 ASV Meeting | 14 SPSP | 15 SPSP Moon 366,024 km | 16 SPSP |
| 17 SPSP | 18 New Moon | 19 Moon near Aldebaran & Mercury | 20 Society Meeting 8pm | 21 | 22 | 23 Members Night BBQ 6pm Saturn @ opposition |
| 24 Jupiter below Moon | 25 | 26 First Quarter | 27 Committee Meeting 8pm Moon 404,244 km | 28 | 29 | 30 |

Monthly Events & High Lights. - Watch out for Auroras
Public nights 1st, 8pm start - **Society Meeting** at 8pm on 20th @ the Peninsula School
Members Night BBQ 6pm at the Briars 23rd also Saturn is at opposition on the 23rd
SPSP - South Pacific Star Party 14th to 17th @ Ilford NSW - www.asnsw.com/spsp
Evening - Saturn 1.2 deg from Beta Scorpii on the 4th

| CALENDAR | | June / 2015 | | | | |
|------------------------------|--|--------------------------------------|--|----------|---|--|
| Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
| | 1 Venus & Jupiter 0.35 deg apart | 2 Saturn above the Moon | 3 Full Moon | 4 | 5 Public Night 8pm | 6 |
| 7 | 8 | 9 Neptune 3deg south of Moon | 10 ASV Meeting Last Quarter | 11 | 12 Occultation of Uranus by the Moon @ 4:54 am | 13 |
| 14 | 15 Mercury just left of crescent Moon | 16 | 17 Society Meeting 8pm New Moon | 18 | 19 | 20 Members Night BBQ 6pm Venus right of Moon |
| 21 Jupiter below the Moon | 22 | 23 Dawn Mercury in Hyades cluster | 24 Committee Meeting 8pm First Quarter | 25 | 26 | 27 |
| 28 | 29 | 30 | | | | |

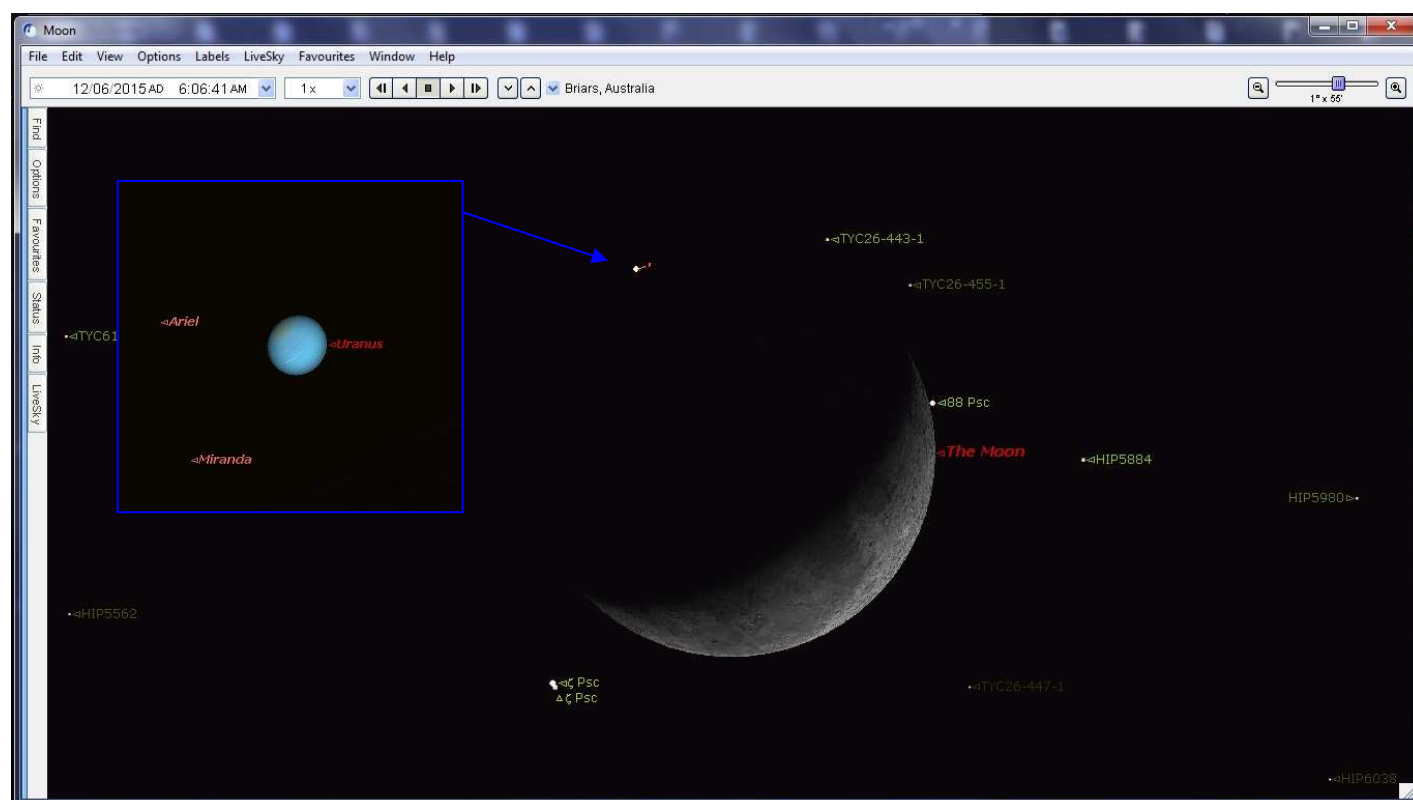
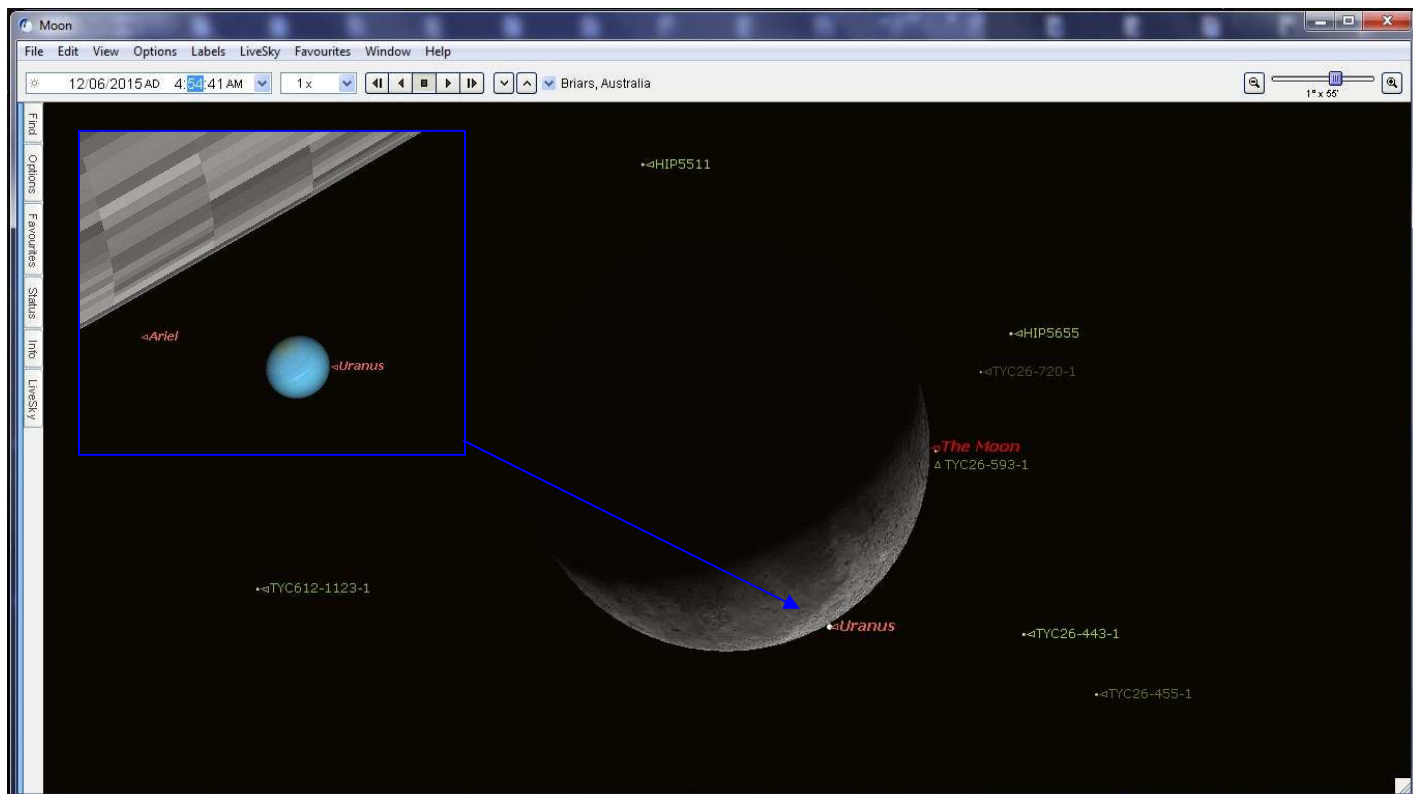
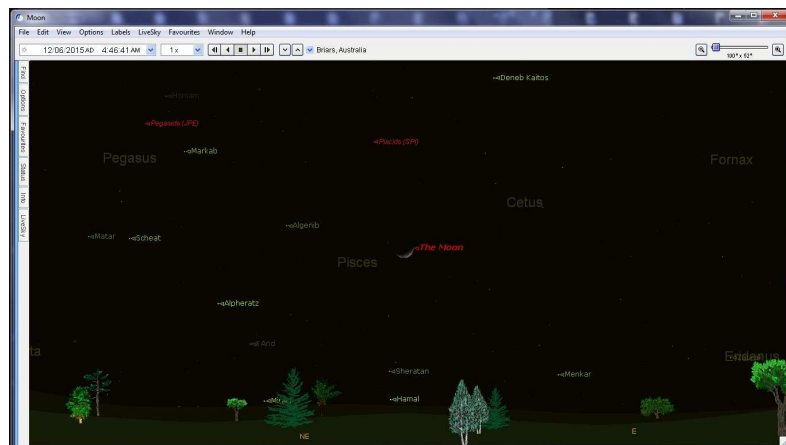
Monthly Events & High Lights. - Watch out for Auroras - Red Days indicates School Holidays
Public nights 5th 8pm start - **Society Meeting** at 8pm on 17th @ the Peninsula School
Members Night BBQ 6pm at the Briars 20th also Venus will be right of crescent Moon
Evening - Venus & Jupiter 0.35 deg apart on the 1st
Morning - **Occultation of Uranus by the Moon on the 12th @ 4:54 am**
Morning - Mercury just left of crescent Moon on the 15th - Mercury in Hyades cluster on the 21st to 24th



Note this years the Members night BBQ's will be the first Saturday after the Society Meeting.
 Also General Meetings will be called Society Meetings under the new regulations.

Sky for June we look at the Occultation of Uranus by the Moon on the 12th @ 4:50am. This will be a good opportunity for those who have had trouble finding Uranus. In the morning of the 6th of June the crescent Moon will be there to guide you to Uranus, about 25 degrees above the eastern horizon & rising. But you will need to be out at your telescope 30 minutes beforehand to see Uranus at 4:54am slip behind the Moon and stay there till 6:05am, when it will re-appear. But you do not have much time as the sun will be rising shortly after. Uranus is 4 times the diameter of the earth & is easily spotted in binoculars as its 5.9 magnitude. Give it a go!

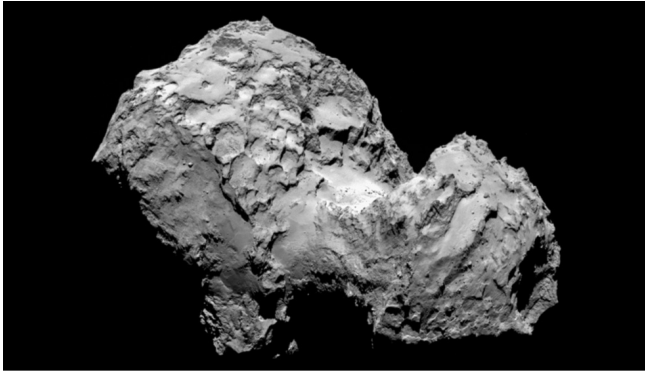
Produced on Starry Night by Greg Walton



ASTRO NEWS

By Peter Lowe

ROSETTA TAKES THE NEXT STEP TOWARD THE OORT CLOUD



Last year we acknowledged the sad passing of arguably Australia's greatest comet hunter, Mr. Bill Bradfield. In the latter part of the last century, the name Bradfield became synonymous with cometary visitors from our solar system's outer limits. The entire solar system is essentially embedded inside a vast spherical, trillion-comet cloud known as the Oort Cloud. The inner part of this cloud was swept clean like the eye of a storm by the planets forming in the early solar system. Today we only see the tiniest fraction of comets that have orbital eccentricities high enough to

bring them into the planetary death zone. Once a comet enters this zone it starts a death dance within the gravitation maelstrom of the planets and astronomically speaking does not last long. The Oort Cloud envelops the extreme outer regions of the solar system beyond about 200AU and extending nearly a third of a light-year. Oort Cloud objects are supreme fossils from the solar system's early history and offer insight into the raw materials and physical processes at play during that critical period when our Sun started to form with its associated planetary system. However to get at these supreme fossils you have to go out there and sample them directly. At present such a space mission is technically not possible but there is a second best option. Short period comets inhabit the inner solar system and still possess remnant materials despite being heavily modified by their frequent passes close to the Sun. For instance Halley's comet circulates in the inner solar system every 76 years or so and loses millions of tonnes of dust and ice at each pass. Toward perihelion or it's closest pass by the Sun we see its beautiful tail develop which astronomers love to study and photograph. Unfortunately this material is modified quickly by the Sun's radiation and astronomers are left to "guess" its original composition. This is a little like exploring a jungle by analysing campfire smoke. You really want to get out into the jungle.

Occasionally one of these distant Oort Cloud comets traverses the inner solar system allowing us access into this fossilised treasure trove of ices and dust. These rare objects fall "as manna from heaven" into the inner solar system to be discovered by comet hunters such as Bill Bradfield. Some such as the recent comet ISON come all the way in getting too close to the Sun resulting in complete destruction and all we can do is watch the show however some never come close enough to really heat up and stay basically unaltered in the region of the outer planets. This is a dangerous region for comets because the gravitational influences of the giant planets will ultimately disrupt their orbits but it does allow us access to basically unaltered material in a region we can reach by space probe.

Last August the ESA space probe Rosetta began orbiting a relatively close-by comet known as C/76P. While C/76P is hardly a pristine comet, it is relatively close by and therefore much easier to reach than those in the outer solar system. It orbits within the inner solar system out to the distance of Jupiter then back inside the orbit of Mars. At these distances the comet will still have been affected by solar radiation but hopefully not too much. Astronomers and astrobiologists would give their back teeth to get samples of a comet in pristine condition but the chance to examine a less pristine one is equally important.

It is not known if Oort Cloud comets formed independently when the gas cloud density and stability reached critical conditions or whether these objects formed as the cloud contacted into a star cluster. Some of the questions we wish to answer are:

- What were the exact conditions in the cloud?
- Did the Oort Cloud objects form before the Sun formed or did it happen simultaneously?
- What was the composition of the original cloud?
- Does the composition vary from star to star or are all stars formed from the same material mix?
- How did the composition of the comets affect the formation of the planets?

All good questions but until we develop the technology to reach the Oort cloud directly examining inner system comets is the next best option. All I can say "Come on nuclear fusion ion drives".

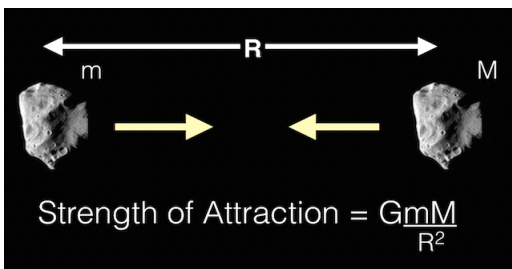


Basic astronomy is intended for the newer members of the society to provide a rudimentary insight into the world of astronomy and the hobby of amateur astronomy. It explains fundamental principles and hopefully helps new members expand their understanding of the universe we live in.

While enjoying the sights in our skies, the first steps into our amateur astronomy journey requires us to understand a few basic physics concepts that must be cleared up so you can grasp how they fit into the general scene. These are gravity, light and atoms.



We will start with gravity. Things fall to Earth but hot air rises. Common sense anecdotes like this were the way people understood their environment for many millennia. Early cosmogonies revolved around the most obvious truths we experience day to day. The most common used the theory of opposites with combinations of Earth, Air, Fire and Water to explain how the world worked. Historically as our understanding of the working of the solar system developed it was recognized that either the Earth and the planets went around the Sun or they all went around the Earth. The question of "what went around what" took many centuries to resolve but throughout this the unanswered question to it all was what drove them around. Until Galileo explored the mechanics of motion, it was the generally accepted view that the planets were pushed around by invisible angels. Galileo showed that (without angelic help) things in motion would continue to move at constant speed in a straight line unless acted upon by an outside force. This was Galileo's Law of Inertia. Since the planets moved in curves there must be a force at work and that force was obviously Sun-directed. Things had to wait until Issac Newton, et al in the 1600's recognized that force as a more general attractive force between matter and Newton proposed his famous conjecture the Law of Universal Gravitation. It was the first ever proposed universal law and so far has stood the test of time. Today we use a complicated geometric model to describe gravity via Einstein's space-time field equations.



Newton's Law of Gravitation is however more than adequate for describing the motion of stars and planets and is responsible for keeping us firmly attached to the Earth. Under Newton's Law, all bodies attract each other with the force of gravity. It is always a force of attraction. Antigravity is very popular in science fiction but does not exist under our current understandings. Gravity is the source of the mysterious Sun-directed force between the Earth and the Sun that keeps the planet following its curved orbit.

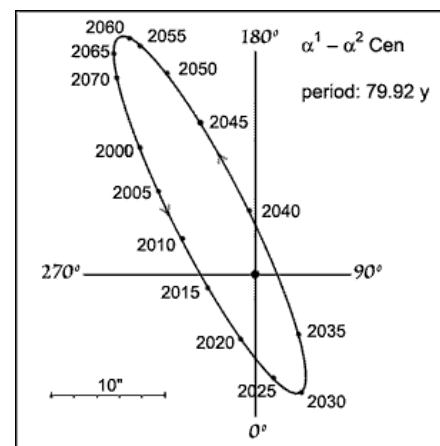
The gravitational force between two objects is in the diagram.

Force = Gravitational Potential X 1/R where the Gravitational Potential is given by GmM/R where "G" is a constant. This immediately tells us that the gravitational potential falls off geometrically because well away from a gravitating mass space-time is linear. Close to gravitating masses Einstein's field equations have to take into account the curvature in space-time. The Earth is traveling in a straight line at constant speed within the curved space-time of the Sun's gravitating mass. From the outside we see this as the planet following a curved path of constant gravitational potential. The Earth can only deviate from this path if acted upon by an external force such as another colliding planet or passing star, hopefully not tomorrow.

While there are other forces at work gravity is by far the most important sculpting force at work across the universe. It dominated the movement of matter over enormous distances controlling the evolution of galactic super clusters, galaxies themselves, the formation of black holes and at the local level the formation of star clusters including the individual stars such as our Sun and of course the ensemble of planets around them.

Probably the most beautiful example of gravity at work is watching the gentle pirouette of the Galilean Moons of Jupiter as they orbit the giant planet, which of course is held together by its own self-gravity. These moons move fast enough and the planet rotates quickly enough that movement is easily tracked by eye at the telescope. Ten minutes at the eyepiece shows the same graceful movements. A truly captivating sight when you considered that these are other worlds orbiting for our pleasure. A slower but no less captivating sight is that of binary stars. Ask any of the long time members what Alpha Centauri looked like last decade. Ten years ago it was an easy double always shown on public viewing nights but today requires a larger telescope to resolve into two stars because the two component stars are currently at their smallest separation.

But fear not they will separate again over the next few decades. I wonder what Newton would have thought of watching a double star go through its paces.



VASTROC 2015

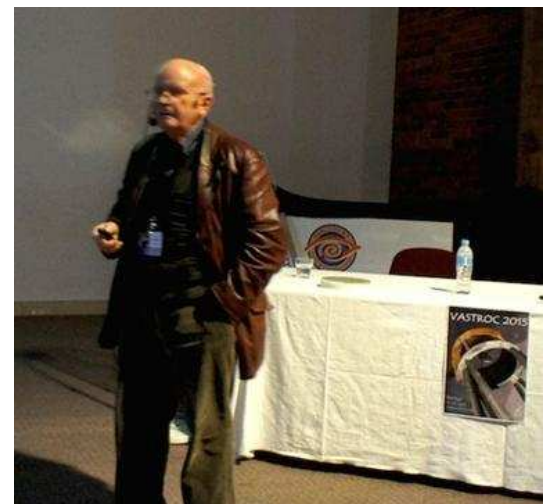
Doctor Who-oo-oo. Doctor Who.
 Doctor Who-oo-oo. Doctor Who.
 Doctor Who-oo-oo. Doctor Who. Doctor Who.

Over the weekend 18th April we took a trip in Doctor Who's Tardas time machine back to the 1960's complete with Daleks. The time trip was all the more believable when I discovered that the shopping hours were also from the 1960's.



The Bendigo and District Astronomical Society (BDAS) hosted their second VASTROC, Victorian Astronomical Conference 2015 at the Bendigo Science and Discovery Centre and can be congratulated on a superb effort. The Discovery Centre is a very impressive facility allowing the public and in particular children to explore science via numerous hands on learning displays. I was much impressed. A centrepiece is the Bendigo Planetarium with a Tardas entry portal. I was quite jealous the BDAS has access to such first rate facilities.

VASTROC's are opportunities to meet other amateurs from around the state and compare notes on personal projects and interests. The conference covered an extensive range of amateur topics ranging from the technical issues of multi-spectral photography, spectroscopy as well as more cultural topics. Several MPAS members attended and it was a great opportunity to reconnect with old friends and recharge and reignite those astronomical interests. The BDAS has developed in leaps and bounds from its last VASTROC and has become a significant driving force in the regions astronomical activities. It is a credit to its members that that it has established such a presence. The Ballarat Society will host the next VASTROC in 2017.



Ian Sullivan presenting on The Beijing Observatory



Peter & Ros Skilton at the Event Dinner

Left - The Registration deck

by Peter Lowe

My childhood story by Greg Walton

This story was sparked by a recent school viewing night at my old school, Parkdale high school, which I attended 40+ years ago. The head principal introduced me as an ex-student & now astronomer. He also said to the students, if you study hard, you too one day could get to be an astronomer. (We noted the word "amateur" was missing). Yes, time for an embarrassing school photo at right.



My great grandfather was a sailor and he used the stars to navigate the oceans. He taught my grandfather about the stars & then my grand father tried to teach me about the stars; Milky Way, constellations & some star names. So my interest in astronomy started when I was very young. I was also told that space goes to infinity ... forever, or has NO end. I spent much time thinking about this. How can something be so big? And if there is an end, what would it look like? I often pondered & dreamed about this instead of listening to my school teachers. In the 1960's Mordialloc had few street lights, which meant the skies were reasonable dark. I could lie on my back in the garden and see the Milky Way. I noticed 2 small clouds to the right of the Milky Way that did not seem to move... Then some clouds move across in front of them, and when these clouds left the sky, the 2 small clouds were still there. I thought these 2 clouds must be much higher up in the atmosphere. The next night I went out again and saw the 2 small clouds were still there. I thought how can this be? ... Maybe they were in space? Maybe they were always there? I need a telescope. I found my father's old 50mm x 7 times magnification binoculars and pointed them skyward. There were many more stars... it did not matter which way I looked, there were stars everywhere. Also I could not see the end of space. This did my head in.

In 1969 space was on everybody's mind, I remember the entire school cramming in to the school hall, to watch Neil Armstrong walking on the moon, on a very small television. At the time I thought of my grandmother, as if someone was not telling the truth. **She said, " yes and man can walk on the Moon!..."**. I do not think she ever believed man *really did* walk on the Moon.

Anyway, Christmas was coming & my mother asked, what would I like for Xmas? I quickly said, a telescope, I imagined a magically long tube, without a stand for some reason, but I was only 9 years old. Soon Xmas came and I got my present, the box was a bit shorter than I thought it would be. I opened the box & what did I see, a microscope! I was not upset... maybe next year. I run to the garden to find some bugs, so I could study them. I never got that telescope; maybe my parents thought I was going to spy on the girls next door. I still have an interest in microscopes today and have an impressive collection. It was not till I was 39 years old before I got to look through a telescope. My telescope Sky Drover an 18 inch Dobsonian.

When I went to school, I was the kid at the back of the class, mucking around with batteries & electric motors, causing a disturbance, I would draw pictures of cars, boats & rockets, anything but school work. I got an A for wood work, but pretty much flunked every thing else. I only ever read 2 story books at school. They did not interest me, as there was nothing to show for it at the end. When I picked up a piece of wood and carved it into a cross-bow to shoot the neighbours cat(!), there was something useful to hold and cherish at the end of the job. So I was good with my hands, therefore I decided to leave school at 15 years & work at my father's small engineering firm. For me, the class room had too many distractions... I could never concentrate on what needed to be done. For me, learning began when I left school. I went to trade school to learn my father's trade of Fitting & Turning, were I learnt trigonometry and found I was good at it, because I could see a use for it. I found the only way I could learn was to be on my own - somewhere quiet. In my spare time I collected & read many science books and today have a large collection. I recently found in an "OP shop", the Little Golden Book "THE MOON" the same as I had when I was very young. Today it's interesting to read what people thought about the Moon in the 1950's.



My grandfather & great grandfather lived in Brighton when there were only a few house scattered amongst the tea trees. In their spare time they would row a small boat out to the wreck of the **Cerberus**, at Black Rock, which is still there today. (Cerberus, the three-headed dog that guards Hades, in Greek mythology) ... then climb on board & saw out pieces of the wooden deck, which they used to make fishing reels on an old lathe. So that makes me a forth generation "turner".

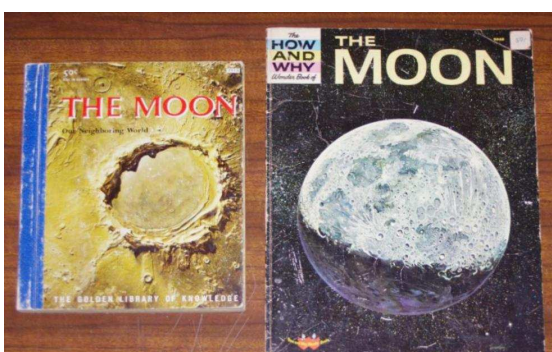


Cerberus at Black Rock

Photo at right - Lanyard made by my Great Grand father, used to carry tools whilst up the ships mast. Below left - 1959 Little Golden Book of Knowledge THE MOON & 1963 How and Why book on The Moon. Below Middle - Me with a 6 pound snapper that I had caught at Table Rock Beaumaris. Below Right - My 2 brothers (right) & me with some rabbits we caught. Life was very different back then.



Deck of Cerberus



How to add a X-wing fighter to your images by Greg Walton

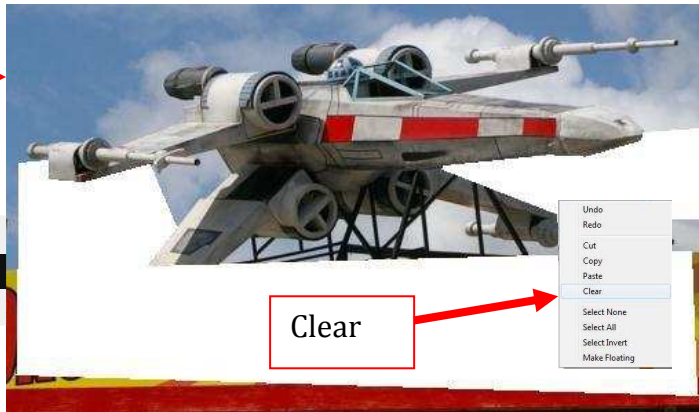


1 - Find photo of X-wing fighter or whatever



2 - Crop photo smaller

3 - Remove background with eraser tool or select / Lasso an area then right click & click on Clear or Cut



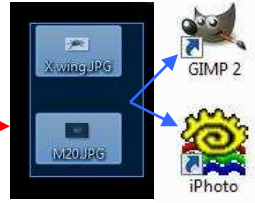
4 - Use cloning tool to remove black support frame around engine & to add missing wing. You will need a bit of imagination here

5 - Finished X-wing on white back ground



6 - Now choose our night sky image

7 - Select both images M20 & X-wing then drag them to the **iphoto** or Gimp icon or equivalent editing software



8 - click on **Fit IN Widow** icon if using iphoto. Rescale them using the + - keys or icons, so you can see both images - If using Gimp, you should see both images, just rescale as shown at right. You should be able to see both images so you can work on them

9 - click on the **Select** icon - then click on the **Magic wand**, see below



10 - then click the **Magic wand** on the white area around the X-wing fighter. As this tool looks at all areas of the images that contain the same colour, in this case white, the soft ware finds it much easier to select white. Also you may need to adjust the percentage of similarity, till you only select all the white.

11 - Now you have selected all the white, click on the right mouse button & then click on inverse image.

12 - You should see that only the X-wing fighter has been selected.

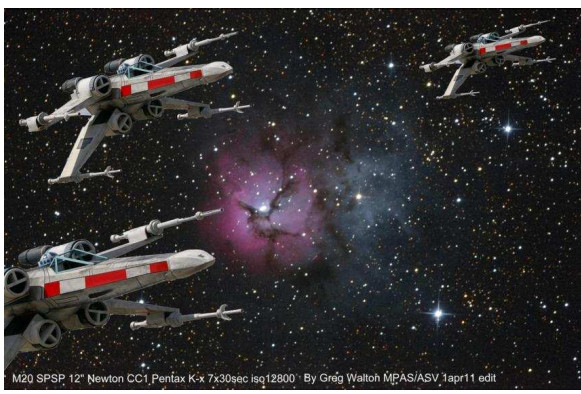
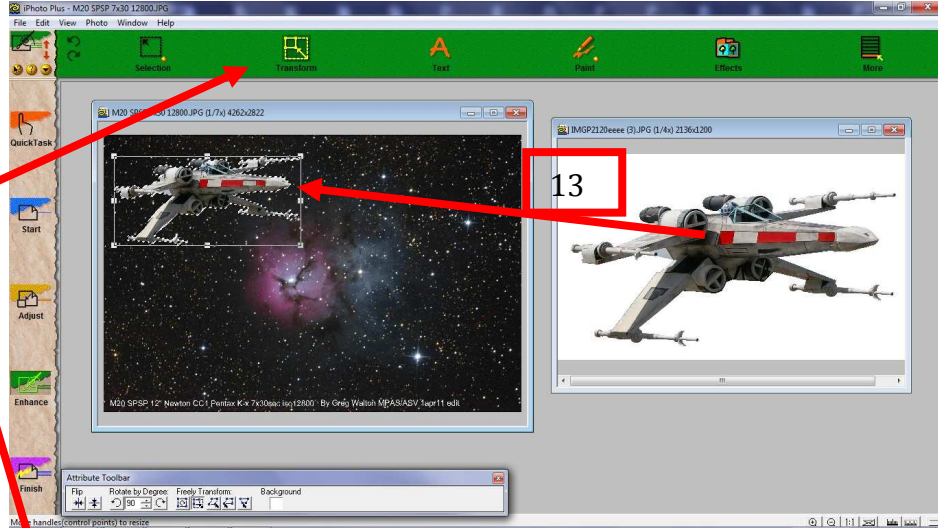
13 - Now place the cursor over the X-wing fighter & hold the left button down on the mouse & drag it to the second image. M20

14 - Now you can resize the X-wing & rotate for the desired effect .

15 - By holding down the Ctrl Control key you can copy another X-wing & resize that X-wing & rotate for added effect .

16 - Just save & share your creation.

17 - I have made a video which may help. How to add a X-wing fighter to your images. Link <https://vimeo.com/124195167> Most image editing software have the same tools and work roughly about the same way.





NGC3312 LMDSS 12" Newton CC1 EQ6 Pentax K30 29x30sec iso12800 By Greg Walton MPAS/ASV 19feb15

Images by Greg Walton

**Above - I imaged galaxy NGC3312 & got way more than I hoped for. How many galaxies can you find in this image?
I counted around 40 galaxies**

Right - I call this the Frankston crescent nebula, because NGC3199 is the post code for Frankston

Bottom Right - The Cats Paw nebula NGC6334 I can easily see how it got its name

Below - The tarantula nebula NGC2070 also call the Medusa (Octopus)



NGC3199 LMDSS 12" Newton CC1 EQ6 Pentax K30 27x30sec iso12800 By Greg Walton MPAS/ASV 19feb15



NGC2070 LMDSS 12" Newton CC1 EQ6 Pentax K30 61x30sec iso12800 By Greg Walton MPAS/ASV 19feb15



NGC6334 LMDSS 12" Newton CC1 EQ6 Pentax K30 34x30sec iso25600 By Greg Walton MPAS/ASV 19feb15

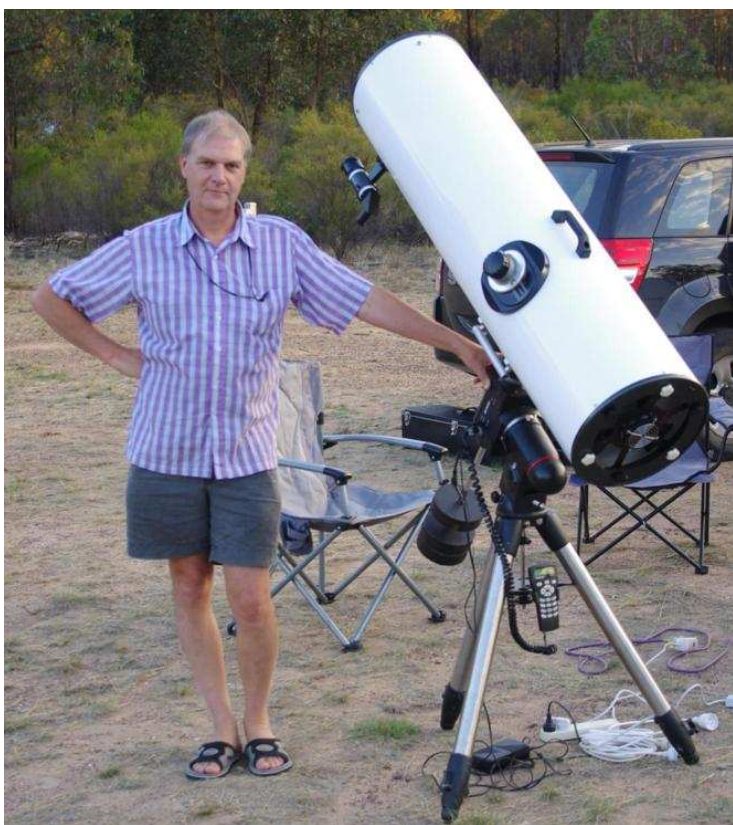


The Running Man nebula. Which way does the Running Man go in this image above?

Right - Maybe like this, more like a Bird man?

Below Right - Maybe its 2 men?

Below - The telescope I used to take these images; my 12 inch Newtonian from my Dobsonian on my trusty old EQ6 mount.



Paul & Therese Albers have made it in to the latest edition of the Peninsula Essence with an article on their astrophotography.

The magazine can also be viewed online at:

<http://peninsulaessence.com.au/online-issue/>

See page 12 & 13

MPAS gets a mention at the end of the article as well. Good work! *Regards, John Cleverdon*



Above - Paul centre toasting to clear skies



Paul with his specialist CCD camera.

While Paul is less enraptured with the meditative quality of the night sky and stars, his passion for astro-photography and deep space is intense, the couple laughing about the crazy hours he spends to get the perfect image.

"Christmas eve 2011, I was up at 4am photographing Comet Lovejoy down at Cape Schanck," says Paul, who started out connecting his camera to a telescope and has now moved onto more professional equipment. "Anyone can take an astronomy photo and enjoy the experience of seeing deep space. I was using a digital camera but have recently moved to a CCD camera, which is a specialist camera. Six years ago when I started I used to take 30-second shots. Now with this more advanced equipment I do five-minute exposures."

Paul says that changes to astro-photography equipment have meant that it has become more complex but this is only part of the journey.

"The other part is using sophisticated software like Photoshop, which is easier with more advanced equipment."

Whether Paul is using CCD or a digital SLR hasn't hampered his gift for all things nebula and deep space, having been published in international astronomy magazines and shown on Channel 10 and ABC news.

"It is a thrill getting that perfect shot, standing on the beach at Balnarring, watching the colours of the auroras and knowing the images you get will be even more intense than those seen by the naked eye," says Paul of his hobby, which has taken off in leaps and bounds over the past few years.

"Because it has become so much more popular recently, sometimes it's actually hard to get a spot to photograph so I always head back to my old stamping ground on the beach at Balnarring or Flinders," says Paul of his beloved peninsula. "We live in the perfect area for capturing these images, being semi-rural. As long as we can keep the light pollution to a minimum it will stay that way. Many of my best images have been taken from my back veranda at home."



Photo: Alex Cherney

Photography... THAT'S OUT OF THIS WORLD

By Melissa Walsh

Paul and Therese Albers can relate to the famous words of the Greek philosopher Plato, spending half of their time looking up at the sky. You could say the couple is obsessed, with astro-photographer Paul spending all hours of the day and night in the search for the perfect picture, and Therese keen enough to have completed her Master of Science (Astronomy).

As we sit in their kitchen, the couple can hardly contain their excitement over our wondrous skies. The perfect Yin and Yang, Therese is the brains behind the operation and Paul the practical side. Their myriad framed photos of nebulae and deep sky images hang proudly on the living room walls, the bright esoteric lights of Aurora Australis and haunting images of the Milky Way a reminder that there is so much more to our universe.

For the demure and unassuming Therese, the journey has been a long one, recalling her fascination as a small child when she would look up at her night sky or "outback TV" and get whisked away into another world.

"When I was nine I knew I wanted to be an amateur astronomer but my mum said it was un ladylike and I wasn't allowed to. I said to myself one day I would do this and so

I had to wait my turn. Finally at 48 years of age I started to dabble in astronomy, eventually returning to study and completing my Masters," says Therese of having her dream come to fruition. "Astronomy takes me to a happy time in my childhood, watching the first moon landing will forever be embedded in my memory."

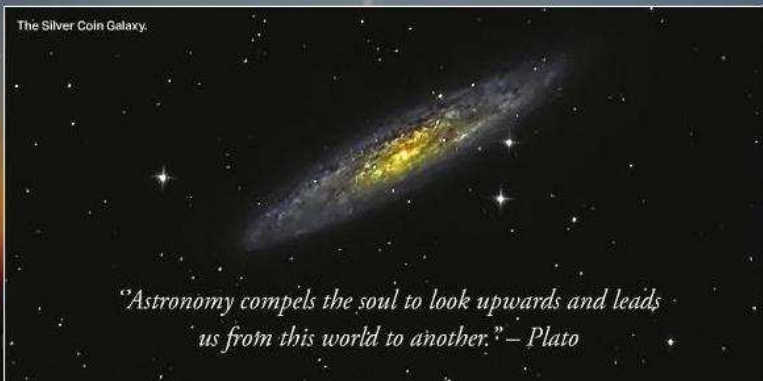
Like many amateur astronomers, the benefits of studying the universe have had far-reaching implications that were unexpected for Therese.

"I now understand more about the nature of the observable universe, the stars, the galaxies, and how things work. It has also shown me that there is something magnificent out there. Everything is so inspiring so there must be something greater behind it," says the amateur astronomer, insisting that she and Paul are merely hobbyists, and that looking up at the sky is her meditation.

Therese's, academic understanding of the universe has not stifled her appreciation of the pure beauty of the night sky, her scientific knowledge intensifying a spiritual and environmental appreciation.

"On a personal level, looking up at this beauty makes me realise how lucky we all are to be here and what a responsibility we have to treat the Earth as a precious commodity," she says.

continued next page...

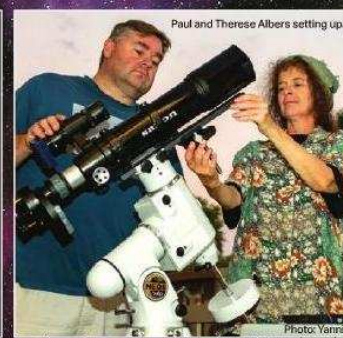
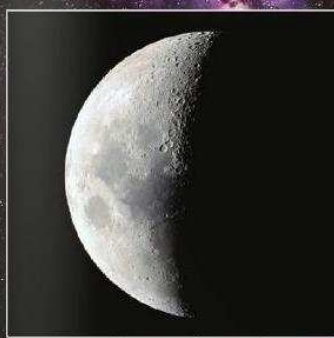


The Silver Coin Galaxy.

"Astronomy compels the soul to look upwards and leads us from this world to another." – Plato



Photo: Alex Cherney



Paul and Therese Albers setting up.

Photo: Yanni

Paul says the difference between photographing nebulae and deep space images is simple.

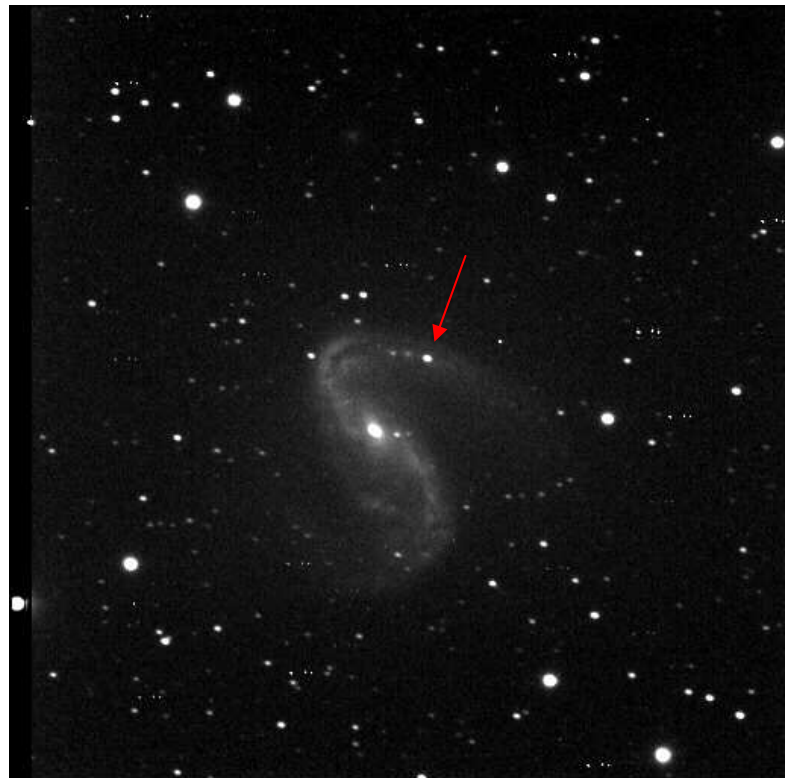
"When you photograph an Aurora Australis, also known as the Southern Lights, you don't need a telescope, just a camera, and a tripod. An aurora is plasma and energy coming from the sun. It is an atmospheric phenomenon consisting of bands of light caused by charged solar particles following the Earth's magnetic lines of force."

"The lights look like magic but they are actually a science. It's all about understanding the atoms and elements. Hydrogen gives off a green colour at lower altitudes. At higher altitudes, it gives off red to crimson."

Being involved with Mornington Peninsula Astronomical Society has been a huge part of the couple's life for the past six years, among like-minded people who are just as inspired by the universe and all its mystery.

"The society is a wonderful group with amateur astronomers and photographers all getting together to learn more. When visitors come along to one of our open nights and see Jupiter through the telescope for the first time, they leave changed," says Therese. "The wonder and awe factor of the universe is beautiful and magnificent."

Mornington Peninsula Astronomical Society can be contacted at www.mpas.asn.au



NGC2442 taken on 10 April 2013 by Greg Walton

NGC2442 taken in 2014 by Alios Dvornik

Above 2 images of the same galaxy taken 1 year apart. Note the supernova in Alios image. (Well done Alios)

Three Martian's came to the MPAS public night and Peter Skilton (Secretary) charged them \$30.00, so that meant they paid \$10.00 each. Then Peter Lowe (President) said, you have charged the three Martian's too much, as there is a special on this week & you should have only charged them \$25, so you will need to give them \$5.00 back. Peter Skilton took the \$5.00 to the Martian's, but on the way thought I can't split \$5.00 into 3 very easily, so I should pocket \$2.00 and give the Martian's \$1.00 each, that meant the Martian's only paid \$9.00 each. So if we add up what the Martian's paid, it is only \$27.00 & if we add the \$2.00 Peter Skilton kept, this equals \$29.00.

So were did the other \$1.00 go? Earth is stranger than Mars!!!



At right - Weirdest things I have see in the night, a baby brush tail possum in a hanging pot, *photo by Greg Walton*

MPAS Gallery By Steve Mohr



Steven Mohr

March 26 · Edited · 🌐 · 🌐

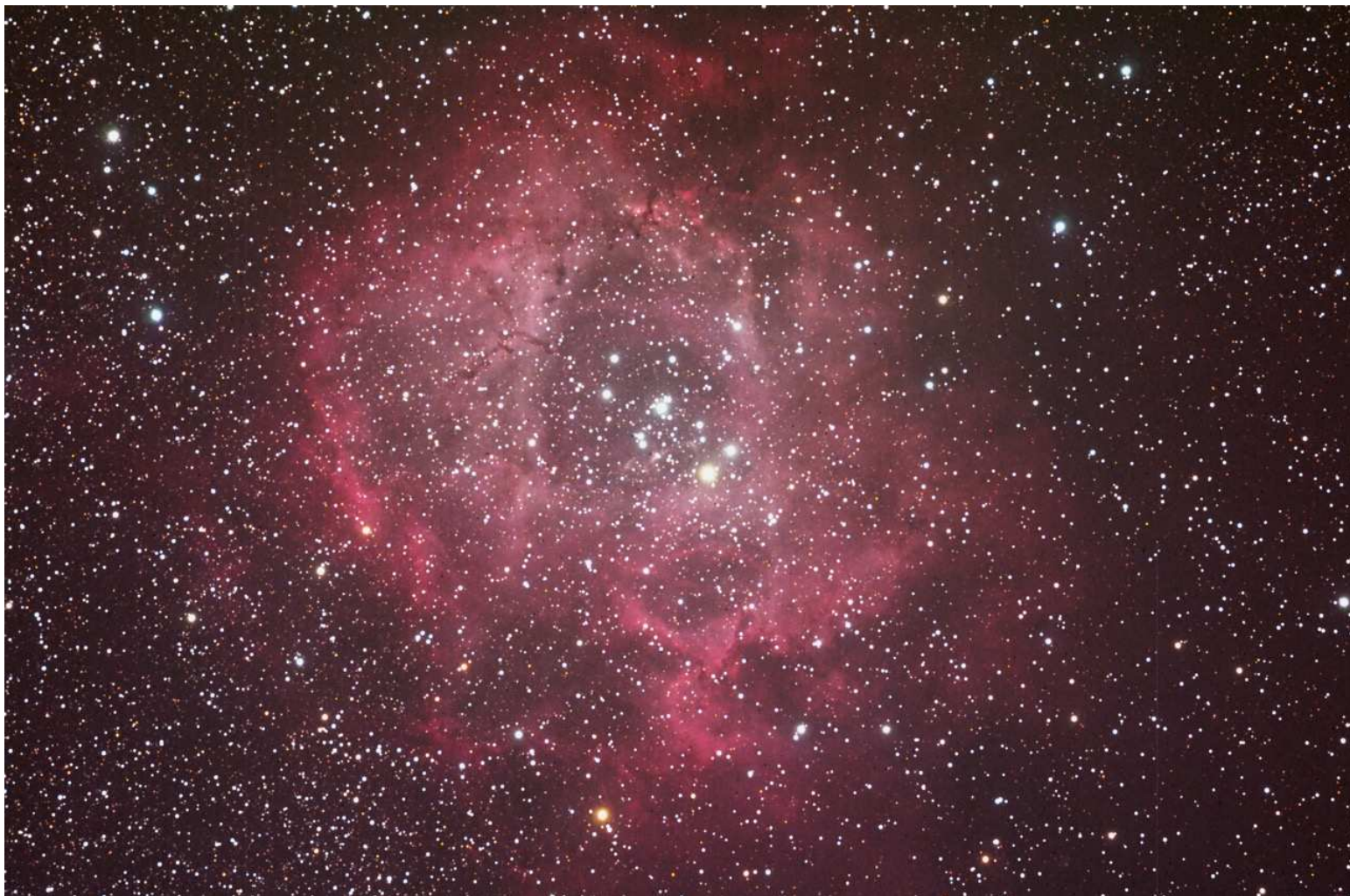
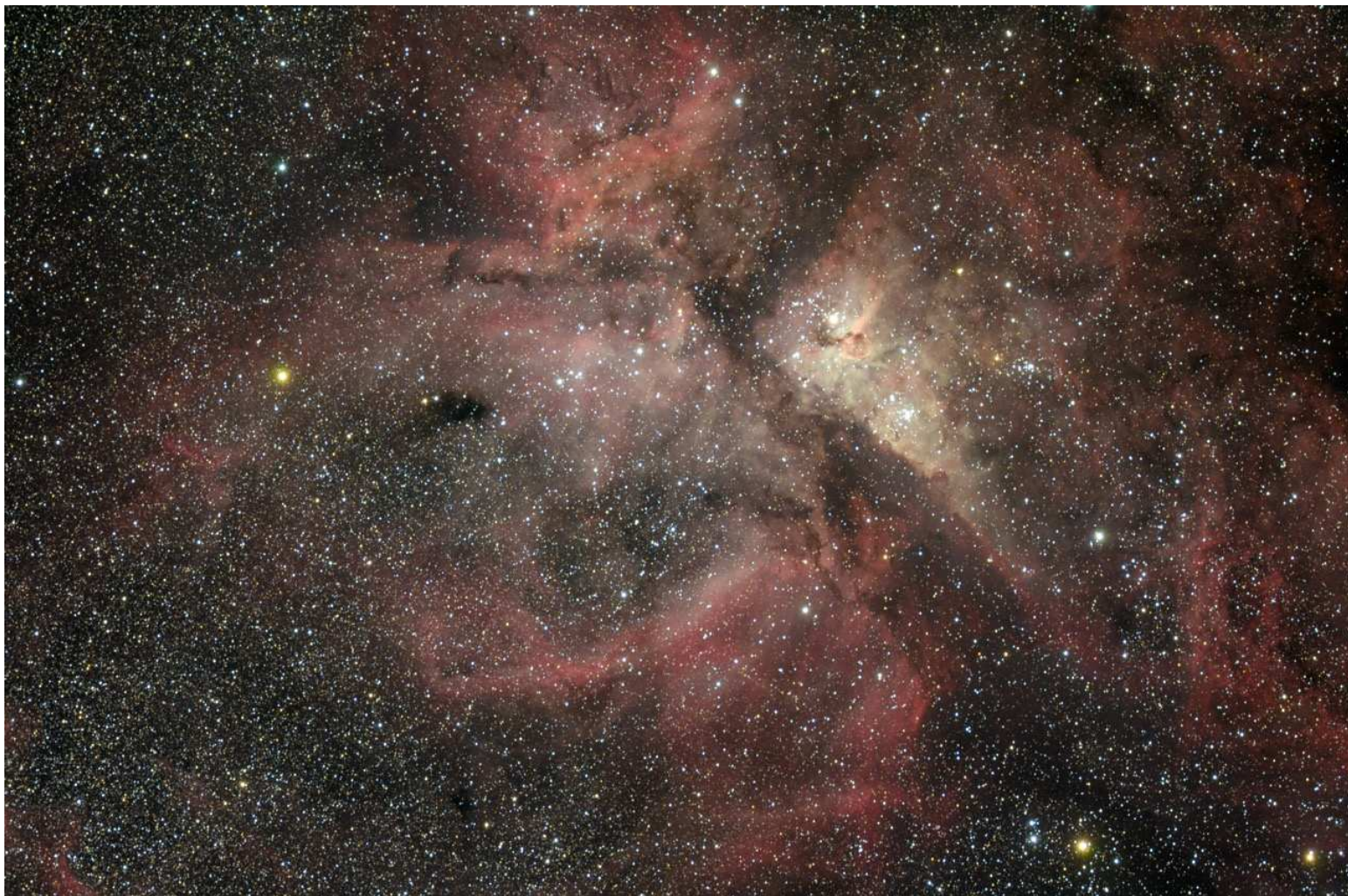
M83 - Southern Pinwheel Galaxy

Hope everyone is doing well. I and a few friends had a fortunate two nights of clear skies in Central Victoria right on the March new moon (2015). Mostly lovely clear skies, with a bit of unwanted breeze on the first night. It was wonderful. A little soft seeing took some resolution away, but I'm still very happy for the opportunity.

It was my first hybrid image, w... See More

MPAS Gallery By Dave Rolfe

Images Below taken from Snake Valley Astro-camp 2015
Top NGC3372 Eta Carina nebula. Bottom NGC2244 Rosetta Nebula



SOCIETY INFORMATION



Peter Lowe



Dave Rolfe



Peter Skilton



Jamie Pole



Trevor Hand



Paul Albers



Paula Ritchens



Clemens Unger



Greg Walton

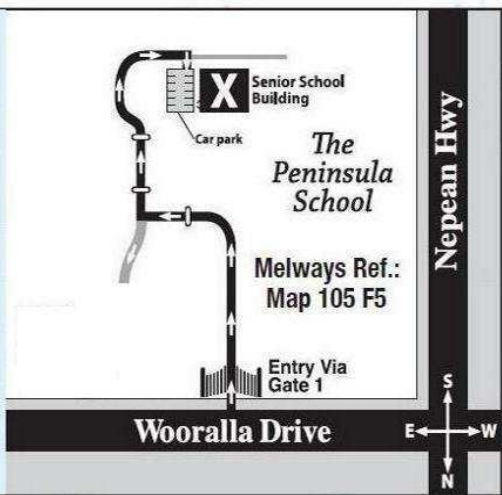
OFFICE BEARERS OF THE MORNINGTON PENINSULA ASTRONOMICAL SOCIETY

President: Peter Lowe
Vice President: David Rolfe
Committee: Trevor Hand, Fiona Murray, Paul Albers, Paula Ritchens, Clemens Unger.
Phone Contact: Peter Skilton - 0419 253 252

Secretary: Peter Skilton
Treasurer: Jamie Pole
Web Master: Steven Mohr
Scorpius Editor: Greg Walton
Library: Fiona Murray

SOCIETY MEETINGS

Meeting Venue: The Peninsula School, Wooralla Drive, Mt. Eliza, (Melways ref. 105/F5) in the Senior School at 8pm, on the 3rd Wednesday of each month (except December).
 Entry is via the main gate, off Wooralla Drive. (see map).
For additional details:
Internet: <http://www.mpas.asn.au>
email: welcome@mpas.asn.au
Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.



LIBRARY

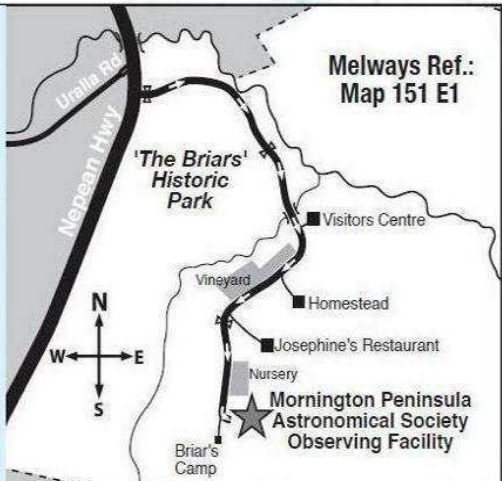
The Society also has books and videos for loan from it's library, made available on most members nights at The Briars site, contact Fiona Murray.

E-SCORPIUS NEWSGROUP

M.P.A.S. main line of communication is the online newsgroup called E-Scorpius. Here you will be kept up to date with the latest M.P.A.S. news and event information as well as being able to join in discussions and ask questions with other members.
 To join, go to: <http://groups.com/group/e-scorpius> and sign up to Yahoo groups - You require to sign up to Yahoo groups to join E-Scorpius. Once you have signed up at Yahoo groups, email welcome@mpas.asn.au saying that you want to join E-Scorpius and you will be added to the E-Scorpius list.

VIEWING NIGHTS - MEMBERS ONLY

Any night, at The Briars, Nepean Hwy, Mt. Martha, starting at dusk.
 Members visiting The Briars for the first time must contact Greg Walton on either 9776 2074 or 0415 172 503 if they need help in getting to the site. Upon arrival at the site, remember to sign the attendance book in the observatory building.
For additional details:
Internet: <http://www.mpas.asn.au>
email: welcome@mpas.asn.au
Phone: 0419 253 252
Mail: P.O. Box 596, Frankston 3199, Victoria, Australia.



Members please write a story about your astronomy experiences and add some pictures. Send them to: Greg Walton gwmpas@gmail.com